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**ABSTRACT**

A method of JPEG compression of an image frame divided up into a plurality of non-overlapping, tiled 8 x 8 pixel blocks $B_{ij}$ where i, j are integers covering all of the blocks in the image frame. A global quantization matrix Q is determined by either selecting a standard JPEG quantization table or selecting a quantization table such that the magnitude of each quantization matrix coefficient, $Q_{ij}$ is inversely proportional to a visual importance, $I_{ij}$, to the image of a corresponding DCT basis vector. Next a linear scaling factor $S_{ij}$ is selected which defines bounds over which the image is to be variably quantized. Transform coefficients, $D_{ijmn}$, obtained from a digital cosine transform of $B_{ij}$, are quantized and the quantized coefficients $T_{ijmn}$ and $Q * S_{min}$ are entropy encoded , where $S_{min}$ is a user selected minimum scaling factor, to create a JPEG image file. The algorithm is unique in that it allows for the effect of variable-quantization to be achieved while still producing a fully compliant JPEG file.